RESEARCH, DEVELOPMENT & TECHNOLOGY TRANSFER
QUARTERLY PROGRESS REPORT

Wisconsin Department of Transportation
DT1241 02/2011

INSTRUCTIONS:
Research project investigators and/or project managers should complete a quarterly progress report (QPR) for each calendar quarter during which the projects are active.

WisDOT research program category: ☐ Policy research ☒ Wisconsin Highway Research Program ☐ Other ☐ Pooled fund TPF#		Report period year: 2014 ☒ Quarter 1 (Jan 1 – Mar 31) ☐ Quarter 2 (Apr 1 – Jun 30) ☐ Quarter 3 (Jul 1 – Sep 30) ☐ Quarter 4 (Oct 1 – Dec 31)
Project title: Evaluation of Thin Polymer Deck Overlays and Deck Sealers		
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WisDOT project ID: 0092-12-06	Other project ID:	Project start date: 9/1/2011
Original end date: 8/31/2014	Current end date: 8/31/2014	Number of extensions: 0

Project schedule status:
☐ On schedule ☐ On revised schedule ☐ Ahead of schedule ☒ Behind schedule

Project budget status:

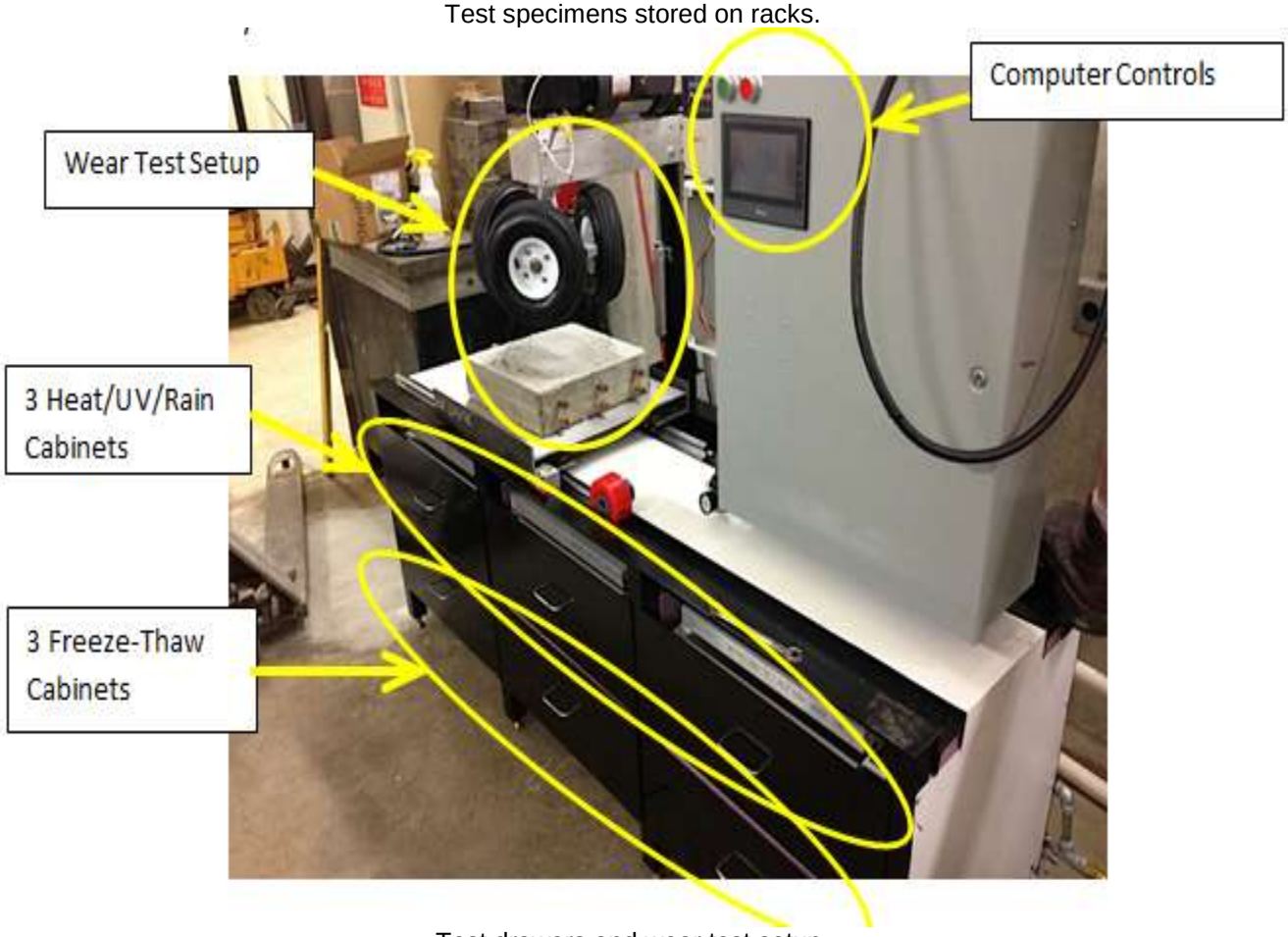
Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
$166,992.00	$8,397.00	$135,118.00	80%	75%

Project description: This project explores the waterproofing capabilities, durability, and additional benefits of utilizing thin polymer overlays on bridge decks in Wisconsin. In this research we will compare performance of thin polymer overlays with each other and with new and emerging technologies to determine the optimal bridge deck maintenance strategy to be employed by WisDOT.

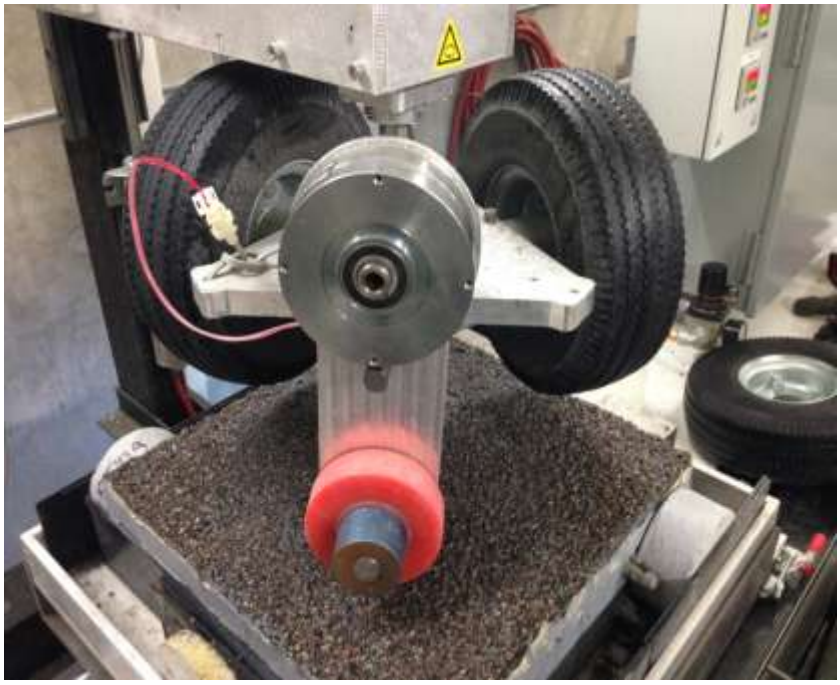
Progress this quarter (includes meetings, work plan status, contract status, significant progress, etc.):

The application of epoxy coatings on the side surfaces of all specimens was completed. This is done to prevent moisture penetration from the sides (overlay penetration allowed only). At this stage, we have completed the round 1 corrosion exposures for all 84 test specimens. We have completed 47 specimens in round 1 freeze-thaw and 45 specimens in UV/heat exposures as well. Wear tests on six specimens have been done and wear marks are visible of the surface of overlays as a results of passage of rubber tires. Friction values are being measured using the friction lock-up device on the wear test setup. The lock-up device replaces one of the three tires when a measurement is taken. The movement of the red friction wheel (shown below) is stopped (locked) using a control device, and a load cell measures the friction force developed. The second round corrosion exposures have begun. We also worked on organizing and streamlining data collection. Finally, we worked on repair of the freeze-thaw equipment that began to malfunction early in the quarter.

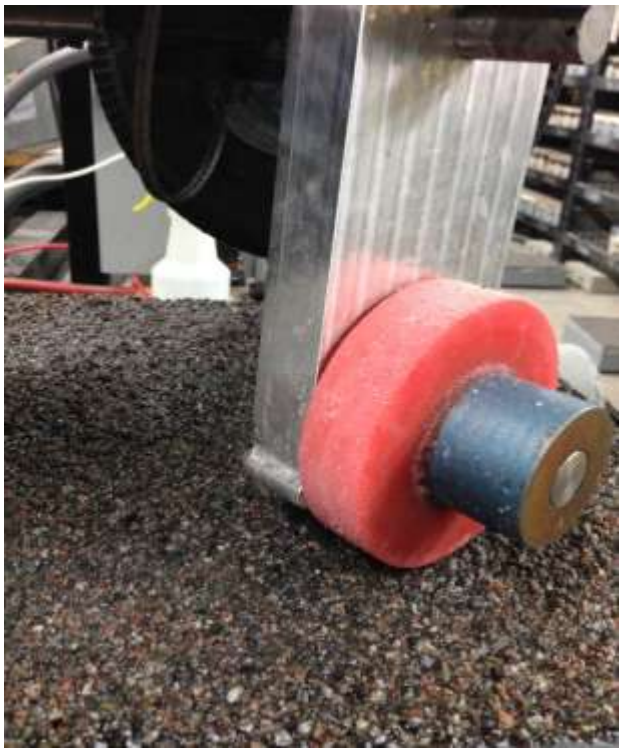
Test specimens stored on racks.



Test drawers and wear test setup.



The wear test assembly with one tire removed and replaced with friction measuring wheel.



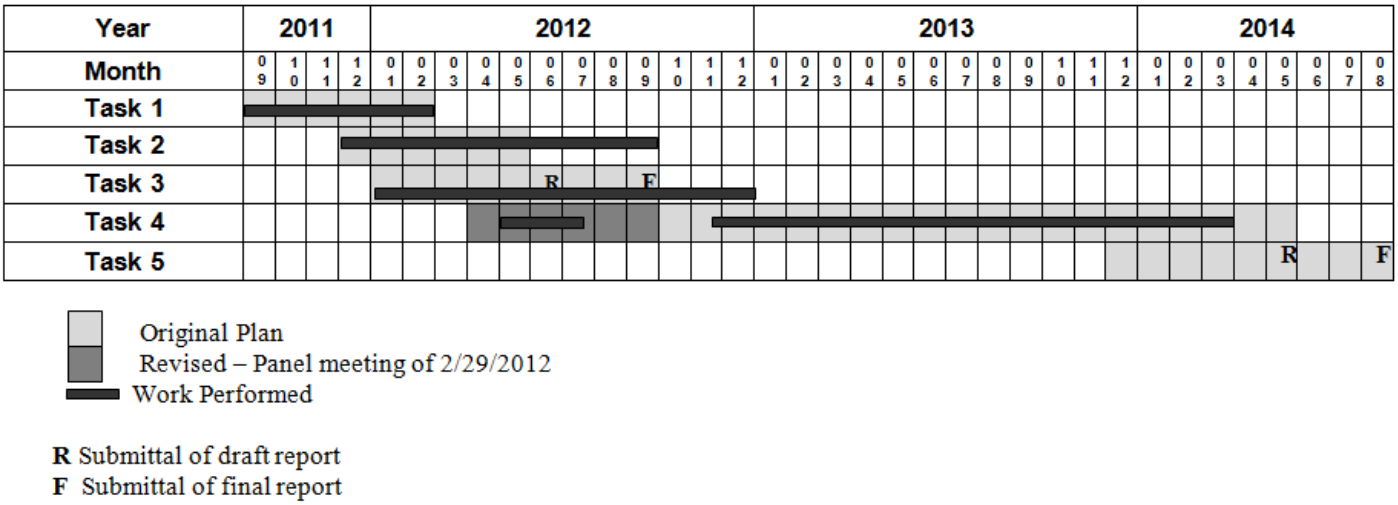
The friction wheel on the overlay surface.

Tire wear marks on the overlay after the first round.

Anticipated work next quarter: We plan to accelerate testing now that the equipment malfunction has been addressed. We will continue with all exposure cycles.

Circumstances affecting project or budget:
Early in the first quarter of 2014, we experienced failure of cooling units on all three freeze-thaw drawers. Problems also surfaced on UV/heat drawers. We performed diagnostic evaluations and were able to fix the problem on two of the three freeze-thaw and UV/heat drawers. We expect to fix the remaining one drawer soon. This affected the anticipated progress of our work this semester as we were not able to conduct those tests for an extended period, and that delayed the subsequent tests on the cycle. However, with the changes and repairs made, we expect to have continuous operation in the upcoming quarter.

Attach / insert Gantt chart and other project documentation



Original Plan
Revised – Panel meeting of 2/29/2012
Work Performed

R Submittal of draft report
F Submittal of final report

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Staff receiving QPR:	Date received:
Staff approving QPR:	Date approved: